

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A device for the partial crystallisation of a phase in a solution, comprising at least one pump ~~(1)~~ for circulation of the solution in a circuit ~~(20)~~ of a heat exchanger ~~(2)~~ formed from at least one tube ~~(200)~~ in contact with a cooling circuit ~~(22)~~, ~~eharakterised in that~~ wherein the circuit ~~(20)~~ of the exchanger ~~(2)~~ includes a zone comprising static means to maintain supercooling in order to delay the appearance of crystals, and a zone comprising static supercooling rupture means to allow the appearance of crystals.

2. (Currently amended) A device according to ~~the previous claim~~ claim 1, also comprising a zone comprising static devices for mixing the solution so that the crystallised particles of the phase are continuously mixed with the solution during the circulation of the said solution.

3. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the supercooling maintenance means include a non-stick coating on at least one part of the internal walls of each tube ~~(200)~~, where the coating takes the form of a material and/or of a surface state designed to delay the appearance of crystals.

4. (Currently amended) A device according to ~~the previous claim~~ claim 3, in which the material is a hydrophobic plastic or glass.

5. (Currently amended) A device according to claim ~~3-or-4~~, in which the surface state has a low roughness.

6. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the supercooling rupture means include at least one change of lining of the internal walls of each tube, and/or at least one change of direction of the circulation of the solution,

and/or at least one obstacle (~~207, 208~~) to the circulation of the solution on the internal walls of each tube.

7. (Currently amended) A device according to ~~the previous claim~~ claim 6, in which the change of lining of the internal walls takes the form of a change of material and/or of a change of the surface state, designed to interrupt the supercooling and allow the appearance of crystals.

8. (Currently amended) A device according to ~~the previous claim~~ claim 7, in which the material of the supercooling rupture means is a metal.

9. (Currently amended) A device according to claim 7 ~~or 8~~, in which the change of surface state at the supercooling rupture means takes the form of greater roughness.

10. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the mixing devices include at least one non-stick coating on at least one part of the internal walls of each tube (~~200~~), and/or at least one change of direction of the circulation of the solution, and/or at least one obstacle (~~207, 208~~) to the circulation of the solution on the internal walls of each tube.

11. (Currently amended) A device according to claim 6 ~~or 10~~, in which the change of direction is an elbow (~~201~~) in the circulation circuit, and/or a chicane (~~202~~), and/or at least one change of section (~~203~~) inside the circulation circuit.

12. (Currently amended) A device according to claim 6 ~~or 10~~, in which the obstacles (~~207, 208~~) to the circulation of the solution include needles and/or plates.

13. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the section inside the circuit progressively increases (~~204~~).

14. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the circuit of the exchanger includes at least one valve (4, 5).

15. (Currently amended) A device according to ~~the previous claim~~ claim 14, in which the valve is placed upstream or downstream of the exchanger and is used to adjust the flow of the solution in order to control the rate of crystallisation or the ice grade.

16. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the pump is designed to circulate the solution in a manner that varies with time.

17. (Currently amended) A device according to ~~one of the previous claims~~ claim 1, in which the circulation circuit includes means (205, 206) for introducing bubbles of gas into the solution.

18. (Currently amended) A device according to ~~the previous claim~~ claim 17, in which the means (205, 206) for introducing the gas are placed in the circulation of the solution or at the walls of a tube.

19. (Currently amended) An assembly, ~~characterised in that it includes~~ including a multiplicity of devices according to ~~one of the preceding claims~~ claim 1.

20. (Currently amended) A method for the partial crystallisation of a phase in a solution, comprising a step that consists in circulating the solution in a circuit (20) of a heat exchanger (2) formed from at least one tube (200) using at least one pump (1), ~~characterised in that it includes~~ including a step that consists in of:

- holding the temperature below the start-of-freezing temperature in order to delay the appearance of crystals with static supercooling maintenance means, and
- bringing about supercooling rupture with static supercooling rupture means to trigger the appearance of the crystallisation.

21. (Currently amended) A method according to ~~the previous claim~~ claim 20, comprising a step consisting ~~in~~ of continuously mixing the crystallised particles of the phase with the solution during the circulation of the said solution by means of static solution mixing devices.

22. (Currently amended) A method according to ~~the previous claim~~ claim 21, comprising a step consisting ~~in~~ of varying the flow of the solution over time, by acting on a valve or on the pump.

23. (Currently amended) A method according to ~~one of claims 20 to 22~~ claim 20, comprising a step consisting ~~in~~ of varying the flow of the solution by means of a valve in the circulation circuit.

24. (Currently amended) A method according to ~~one of claims 20 to 23~~ claim 20, comprising a step consisting ~~in~~ of introducing bubbles of gas into the solution circulation circuit (20).

25. (New) A device according to claim 4, in which the surface state has a low roughness.

26. (New) A device according to claim 8, in which the change of surface state at the supercooling rupture means takes the form of greater roughness.

27. (New) A device according to claim 10, in which the change of direction is an elbow in the circulation circuit, and/or a chicane, and/or at least one change of section inside the circulation circuit.

28. (New) A device according to claim 10, in which the obstacles to the circulation of the solution include needles and/or plates.